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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
CORDRAY, DENNIS R				
ART UNIT		PAPER NUMBER		
1791				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/581,459

Applicant(s)

HAHNLE ET AL.

Examiner

DENNIS CORDRAY

Art Unit

1791

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF 298)
Paper No(s)/Mail Date 10/2/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In lines 2 and 3 of Claim 1, it is not clear whether the phrase, "by dewatering a pulp in the presence of a cationic polymer containing vinylamine units and a filler to obtain an ash content of the paper of 3-40 wt%," is intended to be a claimed method step or a part of the preamble.

Claim 1 recites "a cationic polymer containing vinylamine units" and "a polymer obtained by 20 to 100% of hydrolysis of the total formyl groups in a polymer having at least N-vinylformamide as a polymerization component." It is not clear if the two polymers are intended to be the same polymer or if they are different polymers.

In Claim 1, it is also not clear if titanium oxide and/or calcium carbonate are intended to be added to the pulp slurry. It is further not clear whether "a filler" recited in line 3 of the claim is intended to be titanium oxide and/or calcium carbonate or if the filler is a separate additive from the titanium oxide and/or calcium carbonate.

Claim 1 also recites "20 to 100% hydrolysis of the total formyl groups." It is not clear if the number 20 is intended to be an absolute number or a percentage. A similar lack of clarity holds for the recited range "3-40 wt%."

Claim 2 recites "component (B)." As discussed in the immediately preceding paragraph, it is not clear whether or not the titanium oxide and/or calcium carbonate recited following (B) in Claim 1 is/are added to the pulp slurry.

Claim 3 depends from and inherits the indefiniteness of Claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as unpatentable over Lai et al (EP-331047 A).

Lai et al discloses a papermaking process comprising the addition of a polymer containing vinylamine units to a pulp stock containing titanium dioxide (TiO₂) as a retention aid (fixing agent for the TiO₂), and draining, or dewatering, the pulp to make paper. The polymer is made by hydrolyzing from 10% to greater than 99% of the formyl groups in a polymer containing N-vinylformamide units. In an example, paper is made from a pulp stock, to which has been added 10% TiO₂ and 0.01% to 0.05% of the polyvinylamine polymer, each based on the weight of the fiber (Abs; p 3, lines 30-42 and 55-58; p 4, lines 1-4; p 5, lines 2-6 and 44-56; p 8, lines 19-35, Example 12). Making paper inherently involves dewatering the pulp. The ratios of polyvinylamine

polymer/ TiO_2 for the above additions are 0.001 and 0.005, or 0.1/100 and 0.5/100, which lie within the claimed range.

Lai et al discloses a cationic hydrolyzed polymer containing where acid hydrolysis is used (p 5, lines 24-39).

Lai et al does not disclose the ash content of the paper. However, it would have been obvious to one of ordinary skill in the art to retain the majority of the TiO_2 added and thus obtain an ash content in the claimed range.

Lai et al does not disclose the end use of paper made by the process. Absent convincing evidence of unobvious results, it would have been obvious to one of ordinary skill in the art to use the paper as a base paper for making any kind of paper, including the claimed products.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as unpatentable over Hartmann et al (5008321) in view of Utecht et al (6184310) and as evidenced by Lai et al.

Hartmann et al discloses an example (Example 25) of a papermaking process comprising forming a pulp stock comprising 67% pulp and 33% kaolin filler, adding a polymer made in Example 1, which is made by hydrolyzing 30% of the formyl groups in a polymer containing N-vinylformamide units to vinylamine units, to the pulp stock as a retention aid (fixing agent for the filler), and making paper. Making paper inherently involves dewatering the pulp. The polymer is added in the amount of 500 g/ton of paper, or about 0.05% by weight of the pulp. In the example, the ash retention was 55.2%, which is about 18.2% of the paper. The ratio of polymer to filler in the example

is 0.0015, or 0.15/100, which lies within the claimed range (Abs; col 10, lines 11-55, Example 1; col 16, lines 16-39, Example 25). More generally, Hartmann et al discloses that the polymers are from 5% to 100% hydrolyzed (col 7, lines 39-67).

Hartmann et al does not disclose a cationic polymer. Hartmann et al does disclose that the hydrolysis can be carried out in the presence of an acid (Abs; col 2, lines 30-32) and, in the above Example 1, acid hydrolysis is used, which results in a cationic polymer (see Lai et al p 5, lines 24-39 if evidence is needed).

Hartmann et al does not disclose a calcium carbonate or titanium dioxide filler.

Utecht et al discloses polymers containing vinylamine units made by hydrolyzing from 0.1% to 100% of the formyl groups in a polymer containing N-vinylformamide units. The polymers are used as retention and drainage aids and as fixatives for making all known paper, paperboard and cardboard grades by adding them to the stock from 0.01% to 0.1% by weight. Suitable fillers used in making papers are clay, chalk (calcium carbonate), titanium dioxide and kaolin (Abs; col 3, line 62 to col 4, line 4; col 6, line 56 to col 7, line 4; col 7, lines 14-18).

The art of Hartmann et al, Utecht et al and the instant invention is analogous as pertaining to making paper comprising fillers and vinylamine containing polymers. It would have been obvious to one of ordinary skill in the art to use the claimed fillers in the process and paper of Hartmann et al in view of Utecht et al as functionally equivalent fillers well known in the art and to have a reasonable expectation of success. Retaining most of the filler in the paper and obtaining an ash content in the claimed range would also have been obvious.

Hartmann et al does not disclose the end use of paper made by the process. Absent convincing evidence of unobvious results, it would have been obvious to one of ordinary skill in the art to use the paper as a base paper for making any kind of paper, including the claimed products.

Claim 3 is also rejected under 35 U.S.C. 103(a) as unpatentable over Lai et al in view of Takashata et al (3933558), Snow et al (5830318) or Koichi et al (JP-09-217292, machine translation used and included with the Office Action).

The disclosure of Lai et al is used as above. Lai et al does not disclose the kinds of paper made.

Takashata et al discloses a laminated decorative sheet (construction material) comprising a base paper loaded with titanium-oxide or other filler to impart desired color or opacity (Abs; col 3, lines 22-32).

Snow et al discloses a cigarette tipping paper comprising from 20% to 40% by weight of calcium carbonate to impart opacity (Abs; col 3, lines 38-40).

Koichi et al discloses a filled paper comprising from 5 to 35 parts (based on 100 parts bone dry weight) by weight of a mixture of calcium carbonate and titanium dioxide to impart opacity and whiteness. The papers made include India paper (Abs; pars 0001, 0002 and 0018).

The art of Lai et al, Takashata et al, Snow et al, Koichi et al and the instant invention is analogous as pertaining to papers containing calcium carbonate and/or titanium dioxide. It would have been obvious to one of ordinary skill in the art to make a

base paper for the claimed paper products using the process of Lai et al in view of Takashata et al, Snow et al or Koichi et al to obtain the opacity needed for the products.

Claims 3 is also rejected under 35 U.S.C. 103(a) as unpatentable over Hartmann et al in view of Utecht et al and further in view of Takashata et al, Snow et al or Koichi et al.

The disclosures of Hartmann et al and Utecht et al are used as above. Hartmann et al and Utecht et al do not disclose the kinds of paper made. Utecht et al does disclose that any known grade of paper can be made using the polymers.

The art of Takashata et al, Snow et al and Koichi et al is used as above.

The art of Hartmann et al, Utecht et al, Takashata et al, Snow et al, Koichi et al and the instant invention is analogous as pertaining to papers containing inorganic fillers. It would have been obvious to one of ordinary skill in the art to make a base paper for the claimed paper products using the process of Hartmann et al in view of Utecht et al and further in view of Takashata et al, Snow et al or Koichi et al to obtain the opacity needed for the products.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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